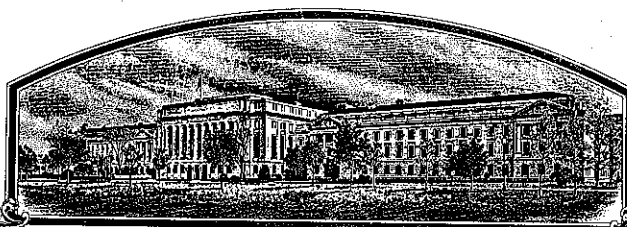


No.



9400198

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Minnesota Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW

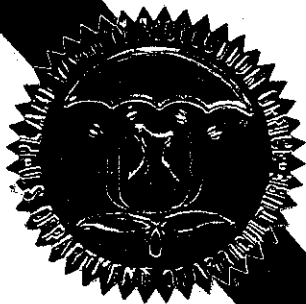
NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR CHECKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE SEED. (STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'Hendricks'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-eighth day of February in the year of our Lord one thousand nine hundred and ninety-seven.

Attest:



Marsha A. Stanton  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

John F. Feltman  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE DIVISION

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

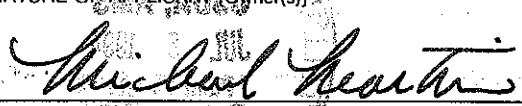
Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) <b>Minnesota Agricultural Experiment Station</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. <b>M85-1112</b>		3. VARIETY NAME <b>Hendricks</b>	
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) <b>University of Minnesota 220 Coffey Hall 1420 Eckles Avenue St. Paul, MN 55108</b>		5. PHONE (include area code) <b>(612) 625-4211</b>		FOR OFFICIAL USE ONLY PVPO NUMBER <b>9400198</b>	
6. GENUS AND SPECIES NAME <b>Glycine max</b>		7. FAMILY NAME (Botanical) <b>Leguminosae</b>			
8. CROP KIND NAME (Common Name) <b>Soybean</b>		9. DATE OF DETERMINATION <b>November 16, 1993</b>		Filing and Examination Fee: \$ <b>2,150 + 175.00</b> Date <b>June 10, 1994 + 7/5/94</b> Certificate Fee: \$ <b>300.00</b> Date <b>February 4, 1997</b>	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) <b>State Agricultural Experiment Station</b>					
11. IF INCORPORATED, GIVE STATE OF INCORPORATION			12. DATE OF INCORPORATION		
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS <b>J.H. Orf Department of Agronomy and Plant Genetics, 411 Borlaug Hall University of Minnesota 1991 Upper Buford Circle St. Paul, MN 55108</b> PHONE (include area code): <b>(612) 625-8275</b>					

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)	
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety d. <input type="checkbox"/> Exhibit D, Additional Description of Variety e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership f. <input checked="" type="checkbox"/> Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____ g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,325) made payable to "Treasurer of the United States"	
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act) <input checked="" type="checkbox"/> YES (If "YES," answer items 16 and 17 below) <input type="checkbox"/> NO (If "NO," skip to item 18 below)	
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> YES (If "YES," through <input type="checkbox"/> Plant Variety Protection Act <input type="checkbox"/> Patent Act. Give date: _____). <input checked="" type="checkbox"/> NO	
19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES) <b>USA February 15, 1994</b> <input checked="" type="checkbox"/> NO <b>Dec. 24, 1996</b>	
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.	

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE <b>Associate Dean</b>	DATE <b>May 23, 1994</b>
SIGNATURE OF APPLICANT (Owner(s))	CAPACITY OR TITLE	DATE

## Exhibit A

## Origin and Breeding History of Hendricks Soybean

Hendricks' soybean traces to the  $F_5$  progeny of a  $F_4$  plant harvested from a population that had been advanced by a modified single seed descent procedure from the cross M74-349 x M77-210. M74-349 is a selection from the cross M68-49 x M65-207. M68-49 is a selection from Evans x M59-120. M59-120 has the pedigree M54-240 x M54-139. M54-240 is a selection from the cross [Lincoln (2) x Richland] x Korean. M54-139 is a selection from the cross Renville x Capital. The pedigree of M65-207 is Clay x Hark. M77-210 is a selection from the cross M71-135 x Simpson. M71-135 has the pedigree Evans x M62-263. M62-263 is a selection from the cross Grant x M319W. M319W has the pedigree Lincoln x Hawkeye. Bulk seed of the  $F_5$  row was designated M85-1112 and was used for yield testing in the  $F_6$  (1986). Subsequent tests of strain M85-1112 were conducted in Minnesota in the  $F_7$  (1987) and  $F_8$  (1988). In the  $F_8$  generation 50 typical plants were harvested individually to initiate purification for observable traits including reaction to race 1 of phytophthora root rot. In the  $F_9$  (1989) M85-1112 was entered in the maturity group 0 Regional Soybean Test. In 1989 twenty-nine rows were grown for purification purposes. Seventeen rows appeared uniform for plant and seed characteristics including resistance to race 1 of phytophthora root rot, therefore seed of these rows were bulked to provide breeder's seed. In the  $F_{10}$  (1990),  $F_{11}$  (1991) and  $F_{12}$  (1992), M85-1112 continued to be tested in the Uniform Regional Soybean Test Maturity Group 0. In the  $F_{10}$  (1990) a small increase of breeders seed was made. In the  $F_{11}$  (1991) Foundation Seed was produced by the Minnesota Foundation Seed Organization. The foundation seed was stored in 1992 while Minnesota and South Dakota conducted further tests on M85-1112. In 1993, the Foundation seed was shared with other states for increase. In the  $F_{12}$  (1993) seed was increased and M85-1112 was approved for release as Hendricks. On February 15, 1994, seed of Hendricks was released to registered and/or certified growers in Minnesota, South Dakota and North Dakota. No off type variants were noted in the seed multiplication process of Hendricks over three generations. This variety breeds true and meets certification standards.

## Exhibit B

## Novelty Statement

'Hendricks' soybean is most similar to 'Lambert' soybean. Hendricks is approximately two days later than Lambert. Hendricks is about one inch shorter than Lambert. Seed of Hendricks is about 1.1 grams per 100 seed larger than Lambert. Hendricks has about 1.6 percent lower protein and 0.4 percent higher oil than Lambert. Seed of Hendricks has yellow hila while seed of Lambert has buff hila.

Data comparing Hendricks and Lambert is taken from the Uniform Test 0, Northern States 1989-91 (a total of 23 tests for most traits).

Variety	Date mature	Yield bu/a	Height inches	Lodging score	Seed Quality score	Seed Size g/100	Protein %	Oil %
Hendricks	9/19	40.7	28	1.3	2.2	17.6	39.4	20.9
Lambert	9/17	42.3	29	1.5	2.0	16.5	41.0	20.5

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MARYLAND 20705

FORM APPROVED: UMB NO. 0581-0056

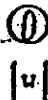
EXHIBIT C  
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Minnesota Agricultural Experiment Station	TEMPORARY DESIGNATION M85-1112	VARIETY NAME Hendricks
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) University of Minnesota 220 Coffey Hall, 1420 Eckles Avenue St. Paul, MN 55108		FOR OFFICIAL USE ONLY PVPO NUMBER 9400198

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,  ). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)

3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)

4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) \_\_\_\_\_

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Consoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) \_\_\_\_\_

★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1<sup>a</sup>)

2 = Type B (SP1<sup>b</sup>)

★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) \_\_\_\_\_



## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

- ★ ☒ 1 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☐ 1 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☒ 2 Race 1 ☐ 0 Race 2 ☒ 1 Race 3 ☐ 0 Race 4 ☐ 0 Race 5 ☐ 0 Race 6 ☐ 0 Race 7
- ☐ 0 Race 8 ☐ 0 Race 9 ☐ Other (Specify) \_\_\_\_\_

## VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 0 Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☒ 1 Race 3 ☐ 0 Race 4 ☐ Other (Specify) \_\_\_\_\_
- ☐ 0 Lance Nematode (*Hoplolaimus Colonus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☒ 1 Iron Chlorosis on Calcareous Soil
- ☐ Other (Specify) \_\_\_\_\_

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) \_\_\_\_\_

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Lambert	Seed Coat Luster	Glenwood
Leaf Shape	Lambert	Seed Size	Glenwood
Leaf Color	Lambert	Seed Shape	Lambert
Leaf Size	Lambert	Seedling Pigmentation	Dawson

## 21. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Hendricks Submitted	122	1.3	71	75	120	39.4	20.9	17.6	2.3
Lambert Name of Similar Variety	120	1.5	74	78	122	41.0	20.5	16.5	2.4

## PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.F. and R.J. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

EXHIBIT E  
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Minnesota Agricultural Experiment Station, University of Minnesota	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER  M85-1112	3. VARIETY NAME  Hendricks
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 220 Coffey Hall 1420 Eckles Avenue St. Paul, MN 55108	5. TELEPHONE (include area code) 612-625-4211	6. FAX (include area code) 612-625-0286
8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.  <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
9. Is the applicant (individual or company) a U.S. national or U.S. based company? If no, give name of country _____  <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
10. Is the applicant the original breeder? If no, please answer the following:  a. If original rights to variety were owned by individual(s): Is (are) the original breeder(s) a U.S. national(s)? If no, give name of country _____  <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO  b. If original rights to variety were owned by a company: Is the original breeder(s) U.S. based company? If no, give name of country _____  <input type="checkbox"/> YES <input type="checkbox"/> NO		
11. Additional explanation on ownership (If needed, use reverse for extra space): The University of Minnesota is the employer of the breeder who developed Hendricks.		

## PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter.

Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.